AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An ion exchange membrane comprising:

(A) a porous film layer having pores with an average pore diameter of 0.01 to 2 μm, wherein the porous film layer comprises a polyolefin resin porous oriented film; and

(B) a surface layer existent on at least one side of the porous film,

wherein the pores of the porous film layer (A) are filled with a crosslinked ion exchange resin and the surface layer comprises (a) an inorganic filler having an average primary particle longest diameter which is 0.1 times or more the average pore diameter of the pores of the porous film layer and 50 μm or less and (b) a crosslinked ion exchange resin,

wherein each of the crosslinked ion exchange resins is produced from at least one crosslinkable monomer selected from the group consisting of a polyfunctional vinyl monomer and a polyfunctional methacrylic acid derivative monomer,

wherein the inorganic filler is a lamellar particle, and

wherein the polyfunctional vinyl monomer is at least one selected from the group consisting of divinylbenzene, divinylsulfone, butadiene, chloroprene, divinylbisphenyl and trivinylbenzene.

2. (Cancelled)

3. (Withdrawn) A process for producing the ion exchange membrane of claim 1, comprising the steps of:

(1) contacting a porous film having pores with an average pore diameter of 0.01 to 2 μm to a suspension containing an inorganic filler having an average primary particle longest diameter which is 0.1 time or more the average pore diameter of the pores of the porous film and 50 μm or less and a polymerizable monomer selected from the group consisting of a polymerizable monomer which provides an ion exchange resin when it is polymerized and a polymerizable monomer which provides an ion exchange resin precursor when it is polymerized in order to infiltrate the suspension into the pores of the porous film and to adhere the suspension to the surface of the porous film;

(2) polymerizing the polymerizable monomer contained in the suspension in the pores and on the surface of the porous film; and

(3) converting the ion exchange resin precursor into an ion exchange resin when the ion exchange resin precursor is obtained by polymerization in the step (2).

4. (Withdrawn) A process for producing the ion exchange membrane of claim 1, comprising the steps of:

(1) contacting a porous film having pores with an average pore diameter of 0.01 to 2 μm to a suspension containing an inorganic filler having an average primary particle longest diameter which is 0.1 time or more the average pore diameter of the pores of the porous film and 50 μm or less, a resin selected from the group consisting of an ion exchange resin and an ion exchange resin precursor, and a solvent in order to infiltrate the suspension into the pores of the porous film and to adhere the suspension to the surface of the porous film;

(2) removing the solvent contained in the suspension in the pores and on the surface of the porous film; and

(3) converting the ion exchange resin precursor into an ion exchange resin when the suspension in the step (2) contains the ion exchange resin precursor.

5. (Original) A diaphragm for a direct methanol type fuel cell which comprises the ion exchange membrane of claim 1.

6. (Original) A direct methanol type fuel cell comprising the diaphragm for a direct methanol type fuel cell of claim 5.

7. (Previously Presented) The ion exchange membrane of claim 1, wherein the pores in the porous film layer have an average pore diameter of 0.01 to 1 μm.

8. (Previously Presented) The ion exchange membrane of claim 1, wherein the porous film layer (A) has a void volume of 20 to 95%.

9. (Previously Presented) The ion exchange membrane of claim 8, wherein the void volume of the porous film layer (A) is 30 to 90%.

10. (Previously Presented) The ion exchange membrane of claim 1, wherein the porous film layer (A) has a gas permeability of 1,000 sec or less.

11. (Previously Presented) The ion exchange membrane of claim 10, wherein the porous film layer (A) has a gas permeability of 500 sec or less.

12. (Previously Presented) The ion exchange membrane of claim 1, wherein the porous film layer (A) has a thickness of 5 to 150 μm.

13. (Previously Presented) The ion exchange membrane of claim 1, wherein the inorganic filler has an average primary particle longest diameter which is 0.2 times or more the average pore diameter of the pores of the porous film layer and 10 μm or less.

14. (Previously Presented) The ion exchange membrane of claim 1, wherein the aspect ratio of the lamellar particle is 200 to 1,000.

15. (Previously Presented) The ion exchange membrane of claim 1, wherein the lamellar particle is at least one selected from the group consisting of montmorillonite, bentonite, smectite, hectorite, beidellite, sauconite, perovskite, saponite, kaolin, sericite, mica, talc and lamellar silicate.

16. (Previously Presented) The ion exchange membrane of claim 1, wherein the inorganic filler is treated with a silane coupling agent or a surface active agent.

17. (Previously Presented) The ion exchange membrane of claim 1, wherein the ion exchange resin contained in the surface layer and the ion exchange resin in the pores form a continuous phase without an interface.

18. (Previously Presented) The ion exchange membrane of claim 1, wherein the ion exchange resin in the pores of the porous film layer (A) further comprises an inorganic filler.

19. (Previously Presented) The ion exchange membrane of claim 18, wherein the concentration of inorganic filler in the pores is lower than the concentration of inorganic filler in the surface layer.

20. (Previously Presented) The ion exchange membrane of claim 19, wherein the ion exchange resin contained in the surface layer and the ion exchange resin in the pores form a continuous phase without an interface.

21. (Currently Amended) An ion exchange membrane comprising:

(A) a porous film layer having pores with an average pore diameter of 0.01 to 2 μm, wherein the porous film layer comprises a polyolefin resin porous oriented film; and

(B) a surface layer existent on at least one side of the porous film,

wherein the pores of the porous film layer (A) are filled with a crosslinked ion exchange resin and the surface layer comprises (a) an inorganic filler having an average primary particle

longest diameter which is 0.1 times or more the average pore diameter of the pores of the porous film layer and 50 μm or less and (b) a crosslinked ion exchange resin,

wherein the crosslinked ion exchange resins are produced from at least one polymerizable monomer selected from the group consisting of sulfonic acid monomers, carboxylic acid monomers, phosphonic acid monomers, amine monomers, nitrogen-containing heterocyclic monomers, esters and salts of these monomers, polymerizable monomers having a functional group capable of introducing a cationic exchange group and polymerizable monomers having a functional group capable of introducing an anionic exchange group, and

wherein the inorganic filler is a lamellar particle.

22. (Previously Presented) The ion exchange membrane of claim 21, wherein the sulfonic acid monomer is selected from the group consisting of styrenesulfonic acid, vinylsulfonic acid and α-halogenated vinylsulfonic acid;

the carboxylic acid monomer is selected from the group consisting of methacrylic acid, acrylic acid and maleic anhydride;

the phosphonic acid monomer is vinylphosphoric acid;

the amine monomer is selected from the group consisting of vinylbenzyl trimethylamine and vinylbenzyl triethylamine;

the nitrogen-containing heterocyclic monomer is selected from the group consisting of vinylpyridine and vinylimidazole;

the polymerizable monomer having a functional group capable of introducing a cationic exchange group is selected from the group consisting of styrene, α-methylstyrene, vinyltoluene, 2,4-dimethylstyrene, p-tert-butylstyrene, α-halogenated styrene and vinylnaphthalene; and

the polymerizable monomer having a functional group capable of introducing an anionic exchange group is selected from the group consisting of styrene, vinyltoluene, chloromethylstyrene, vinylpyridine, vinylimidazole, α-methylstyrene and vinylnaphthalene.